

Final Examination

General Directions: This examination is divided into four sections of three questions each. You are to answer a total of four questions, choosing one from each section.

Neo-positivism: Explanation, Laws, and Confirmation

1. What is meant by a “causal” law? Is it reasonable to insist that all acceptable scientific explanations make use of causal laws?
2. Some would argue that scientific laws are distinguished from accidental generalizations by virtue of the fact that laws support corresponding subjunctive conditionals whereas accidental generalizations do not. Explain this argument and then outline the more important issues involved in assessing the argument.
3. Give a sketch of Dretske’s critique of the Humean notion of scientific law and his argument for a metaphysical analysis of laws.

Early Critiques of Logical Empiricism

4. What is Goodman’s “New Riddle of Induction” and why does it represent a challenge to logical empiricism? What is Goodman’s own solution to the “New Riddle”?
5. Sketch Quine’s critique of the analytic/synthetic distinction as developed in “Two Dogmas of Empiricism.”
6. Describe Quine’s conception of a naturalized epistemology and outline his argument for this position.

Kuhn's Structure of Scientific Revolutions and the Critical Reaction to It

7. What, according to Kuhn, are the chief characteristics of the pre-paradigm stage in the development of a science? Would it be fair to say that sociology is still in the pre-paradigm stage of development? Can you think of another “science” that might be held to be in the pre-paradigm stage?
8. Explain, briefly, why Kuhn’s model of the development of science constitutes a fundamental challenge to some of the basic assumptions that underlie the logical empiricist picture of both the nature of science and the task of the philosophy of science.
9. Toulmin criticizes Kuhn for his allegedly uncritical appropriation of the metaphor of political revolution to describe paradigm conflict in science. Why does Toulmin think that the revolution metaphor is inappropriate, and what alternative metaphor does he propose?

Realism and Anti-realism

10. Explain Maxwell’s “continuum of size” and “continuum of observational means” arguments. What are they supposed to establish?
11. Explain McMullin’s argument for “structural realism” and Hacking’s argument for “entity realism.”
12. Give a brief characterization of van Fraassen’s “constructive empiricism” (remember to define carefully the concept of “empirical adequacy”) and then explain how it differs from both instrumentalism and realism.